

MEASLES Case and Outbreak 'Quicksheet'

To be used as a checklist for determining potential measles cases and assisting in the completion of the Measles Case Report, form DHS # 8345.

Infectious agent: The measles virus is a paramyxovirus, genus Morbillivirus

Mode of transmission: a) Person to person - via large respiratory droplets (most common) or b) Airborne via aerosolized droplet nuclei (tiny droplets suspended in the air for up to 2 hours)

CDC CASE DEFINITION and CLASSIFICATION (for purposes of public health reporting)

Clinical Case Definition: ☐ A generalized maculopapular rash of *at least 3 days duration*, AND ☐ a fever equal to or greater than 101 degrees Fahrenheit (*orally*), AND one or more of the following: ☐ cough, ☐ coryza, or ☐ conjunctivitis.

Case Classification: **Confirmed** - ☐ meets clinical case definition, and ☐ is serologically confirmed or epidemiologically linked to another confirmed case.

Probable - meets ☐ clinical case definition

Suspected - any rash illness with fever

CLINICAL FEATURES

Incubation

Exposure to prodrome: average 10-12 days

Exposure to onset of rash: average 14 days (maximum range 7-18 days)

Prodrome

Begins 10-12 days after exposure to virus; generally lasts 2-4 days, with a maximum range of 1-7 days

Fever and malaise for about 24 hours; fever gradually increases often as high as 103-105 degrees F

Cough, coryza (runny nose), and conjunctivitis

Koplik's spots may occur 1-2 days before rash to 1-2 days after rash. They appear as pin-point, depressed blue-white spots on bright red background on the buccal mucosa.

Rash

Maculopapular, usually lasting 5-6 days

Begins at the hairline, then involves the face and upper neck

During the next three days, gradually proceeds downward and outward, reaching extremities last and being less pronounced on hands and feet.

Usually becomes confluent on face and chest

Rash fades in the same order that it appears, from head to feet

LABORATORY TESTING AND CONFIRMATION

- ☐ Significant IgM measles antibody in serum collected 2-28 days after rash onset
- ☐ Significant rise in measles IgG in paired and acute convalescent sera drawn two weeks apart
- ☐ Virus isolation by urine or nasopharyngeal specimen, collected before fifth day of rash onset, to be used as an epidemiologic tool for DNA genotyping

RECOMMENDED TREATMENT AND CHEMOPROPHYLAXIS

<i>Treatment</i>	<i>Children</i>	<i>Adults</i>
Immune Globulin (IG)	Give within six days of exposure to infants less than 1 year old w/o previous measles vaccine. Dose is 0.25 mL/kg of body weight (.5 mL/kg for immunocompromised children) with a maximum dose of 15 mL.	Appropriate for known or presumed susceptible pregnant women or immunocompromised persons. Dose is 0.25 mL/kg of body weight (.5 mL/kg for immunocompromised children) with a maximum dose of 15 mL. Dose can be doubled for severely immunocompromised
Measles Vaccine (MMR)	Appropriate for any child without 2 previous measles vaccine doses, if given within three days of exposure.	Appropriate for any adult without 2 previous measles vaccine doses (1 dose if born before 1957), if given within three days of exposure.

(OVER)

Proof of measles immunity is determined by meeting one of the following criteria:

- ☐ 1. Documentation of having received two doses of live virus measles vaccine, the first dose on or after 12 months of age and the second dose at least 30 days after the first (the recommended interval between doses is 90 days)
- ☐ 2. Serological evidence of measles antibodies.
- ☐ 3. Diagnosis of having had measles disease as documented by a physician.

OTHER MEASLES SYNDROMES

Atypical measles and *modified measles* are two syndromes frequently misinterpreted in measles surveillance and investigation. These terms should not be generalized or attributed to a rash/febrile illness not consistent with meeting the CDC case definition for measles.

By definition:

- ☐ **Atypical measles** syndrome (centripetal rash, lymphadenopathy) occurs only in persons who are exposed to natural measles after they received killed measles vaccine (KMV). (600,000-900,000 persons received KMV in the U.S. from 1963-1967)
- ☐ **Modified (mild) measles** syndrome occurs primarily in patients who received immune globulin (IG) as post-exposure prophylaxis and in young infants who may have some residual maternal antibody.

MEASLES CASE INVESTIGATION

Measles is a reportable disease. Both clinically confirmed and probable cases must be reported to DHS on a Measles Case Report form, DHS #8345.

Investigation process:

1. Upon notification of a measles suspect, complete a ☐ Measles Case Report Form by conducting an interview with the measles case to:
 - ☐ confirm patient information (**at a minimum**: name, age, address and type of setting exposed)
 - ☐ confirm clinical signs and symptoms (**at a minimum**: rash onset, fever, cough, coryza, or conjunctivitis)
 - ☐ collect all pertinent medical information (recent medications, physician information, hospitalization, etc.)
 - ☐ determine patient's immune status (history of **measles** vaccination)
 - ☐ determine the possible source of exposure (within two weeks prior to rash onset):
 - ☐ contact with a person who is suspected of having measles or who has a febrile/rash illness
 - ☐ travel or gathering
 - ☐ medical facility
 - ☐ list all household contacts and determine those who do not have **measles** immunity.
 - ☐ list all other contacts (include persons sharing the same air space during the time and for three hours after the case was present and not masked); determine those who do not have **measles** immunity.
2. Upon confirmation of the clinical diagnosis as possible measles, ☐ arrange for serological testing.
3. Notify DHS as soon as possible, but no longer than 24 hours after diagnosis, by contacting your Immunization Branch Field representative.

The following time line depicts the clinical course of measles and may be useful in the investigation process:

Exposure and Incubation Period (7-10 days)			Rash (5-6 days)	Communicability
weeks: -3	-2	-1	RASH ONSET	1
Onset of rash minus 14 days is probable exposure DATE:		Onset of rash minus 4 days is probable start of infectious period DATE: PRODROME: (2-4 days cough), coryza, conjunctivitis, Koplik's spots	DATE:	Onset of rash plus 4 days is probable end of infectious period DATE:

MEASLES OUTBREAK CONTROL RECOMMENDATIONS

Live measles vaccine may prevent disease if administered within 72 hours of exposure. Immune globulin (IG) may prevent or modify disease and provide temporary protection if given within six days of exposure.

(see *Recommended Treatment and Prophylaxis Guidelines*)

The following course of action is recommended to prevent the spread of measles disease:

1. Determine the type of setting involved (i.e., school, institution, camp, hospital, ER, clinic, or doctor's office).
2. Refer to the corresponding DHS Immunization Program Measles Outbreak Investigation and Control (03/91) and follow the recommended guidelines for **suspect** or **confirmed** measles case.
3. Identify individuals who *do not have measles immunity* and follow the recommended prophylactic treatment:
 - ☐ individuals 12 months of age or older should receive one dose of MMR.
 - ☐ individuals 6-12 months of age should receive one dose of single antigen measles vaccine or MMR.
 - ☐ individuals 0-6 months of age should be referred to their pediatrician for recommended treatment with IG.
 - ☐ individuals who are pregnant should be referred to their OB/GYN for recommended treatment with IG.
4. Report **all** suspect and confirmed cases to DHS Immunization Branch Field representative.